

**DIVISION OF HEALTH PLANNING AND  
RESOURCE DEVELOPMENT  
JANUARY 2006**

**CON REVIEW: HG-MME-1005-042  
THE UNIVERSITY HOSPITALS AND CLINICS, JACKSON  
ADDITION OF MRI UNITS AT UMC MEDICAL PAVILION AND  
UMC CANCER INSTITUTE  
CAPITAL EXPENDITURE: \$7,123,352  
LOCATION: JACKSON, MISSISSIPPI**

**STAFF ANALYSIS**

**I. PROJECT SUMMARY**

**A. Applicant Information**

The University Hospitals and Clinics of the University of Mississippi Medical Center is a state owned not-for-profit acute care teaching inpatient hospital with full emergency and outpatient services. The facility has a management service agreement with Quorum Health Resources of Nashville, Tennessee. The full authority and ultimate control of the hospital remains with the Board of Trustees of State Institutions of Higher Learning, with administrative authority delegated to the Chancellor and Vice Chancellor for Health Affairs of the University of Mississippi Medical Center. The facility is accredited through the Joint Commission on Accreditation of Healthcare Organizations.

The hospital is currently licensed to operate 664 medical/surgical beds, 21 adult psychiatric beds, 12 pediatric psychiatric beds, and 25 rehabilitation beds. The total licensed bed capacity is 722.

The University Hospitals and Clinics' occupancy rates, average lengths of stay (ALOS) and the Medicaid utilization rates for the three most recent years are as follows (medical/surgical beds only):

Fiscal Year	Occupancy Rate (%)	ALOS (Days)	Medicaid Utilization Rate (%)
2002	71.73	6.91	49.0
2003	69.15	7.09	49.0
2004	69.32	6.89	50.5

Source: Division of Health Facilities Licensure and Certification, MSDH.

**B. Project Description**

The University Hospitals and Clinics requests Certificate of Need (CON) authority to: (1) purchase and install one Siemens Magnetom Symphony Magnetic Resonance Imager inclusive of MRI, control room, injector, coils, software and training, at a cost of \$1,229,000 to replace the MRI that is currently located at the University Medical Pavilion (UMC); (2) purchase and install an additional 1.5 Tesla open-bore Siemens Magnetom Espree Magnetic Resonance Imager inclusive of MRI, control room, injector, coils, software and training at a cost of \$1,807,000 at the UMC Pavilion; and (3) purchase and install one Siemens Magnetom Symphony Magnetic Resonance Imager inclusive of MRI, control room, injector, coils, software and training at a cost of \$1,545,240 at the Cancer Imaging Center at the Medical Mall. The equipment at the Medical Mall will be used to acquire diagnostic images for cancer patients and for other outpatients seen in the University Hospitals outpatient clinics.

The modular building that houses the current MRI unit at the UMC Pavilion will be removed and replaced with two adjoining modular building(s) that will house the replacement MRI and the new MRI. The new construction consists of 1,400 square feet. Renovations consist of modifying 500 square feet of space to accommodate support functions for the UMC Pavilion MRIs. The applicant also proposes minor repairs to the existing finishes in adjoining space in the UMC Pavilion building.

The applicant states that the location for a future MRI in the University Hospital's Cancer Imaging Center at the Medical Mall was provided in the initial construction. The construction involved in this portion of the project consists of 900 square feet. Renovations at the Jackson Medical Mall consist of 4,000 square feet of shelled in space within the University's cancer imaging department.

The applicant expects to hire one additional magnetic resonance technologists at an estimated annual cost of \$52,000 the first year.

The Division of Health Facilities Licensure and Certification has approved the sites for the new MRI equipment. The applicant expects to obligate the capital expenditure upon approval.

**II. TYPE OF REVIEW REQUIRED**

This project is reviewed in accordance with Section 41-7-191, subparagraphs 1 (f) and (j) of the Mississippi Code of 1972, Annotated, as amended, and duly adopted rules, procedures, plans, criteria, and standards of the Mississippi Department of Health.

In accordance with Section 41-7-197 (2) of the Mississippi Code of 1972, Annotated, any affected person may request a public hearing on this project within 20 days of publication of the staff analysis. The opportunity to request a hearing expires on February 6, 2006.

### III. CONFORMANCE WITH THE STATE HEALTH PLAN AND OTHER ADOPTED CRITERIA AND STANDARDS

#### A. State Health Plan (SHP)

The *FY 2006 Mississippi State Health Plan* contains policy statements, criteria and standards which an applicant is required to meet before receiving CON authority for the acquisition or otherwise control of MRI equipment and the offering of MRI services. This application submitted by The University Hospitals and Clinics is in substantial compliance with the *FY 2006 State Health Plan*.

#### The Acquisition or Otherwise Control of MRI Equipment

##### **SHP Criterion 1 – Need**

An entity desiring to acquire or otherwise control MRI equipment, or offer MRI services, must document that the equipment shall perform a minimum of 1,700 procedures per year by the second year of operation, utilizing the procedures estimation methodology contained in the *State Health Plan*.

The applicant is a current provider of MRI services and wishes to replace a Siemens Vision 1.5t MRI at the UMC Pavilion, which the applicant states was purchased in June 1995. The applicant expects that the existing MRI scanner will be traded in on the new 1.5t scanner and the trade in value used to offset the costs of the replacement MRI. The applicant further states that the current volume for the existing 10 year old unit exceeds 1,700 tests per year. The unit is much slower than current technology and is insufficient to meet the demands for service. Outpatients seen at the Pavilion are frequently referred to providers outside because UMC does not have the capacity to scan the outpatients on the MRI used for inpatient services.

The applicant also proposes to purchase a second open-bore MRI unit to be housed at the Pavilion. The applicant believes that the demand for patients seen at the UMC Pavilion is strong enough to support two state-of-the-art MRI scanners.

The University Hospitals and Clinics estimates that the two units will perform 2,805 procedures during the first year, 3,558 during the second year, and 4,562 during the third year of operation. This equates to 1,403 procedures per unit the first year, 1,779 procedures per unit the second year, and 2,281 procedures per unit the third year of operation.

Further, in reference to the third MRI proposed, the applicant submits that the absence of an MRI at the Jackson Medical Mall limits the access of patients to this technology. The applicant asserts that the MRIs located at the University Hospital are difficult for the underserved to access because the underserved patients cannot easily come back another day for the test due to transportation problems. The applicant further states that the utilization of the MRI scanners located within the University Hospital to support its inpatient functions are of such volume and intensity that on demand scheduling of outpatients is impracticable or impossible.

University Hospitals and Clinics estimates that the MRI unit at the Jackson Medical Mall will perform 753 procedures during the first year, 1,255 during the second year, and 2,008 during the third year of operation. However, the application contains seven physician affidavits, which indicates that over 2,656 MRI procedures for year two will be referred for the unit to be located at the Jackson Medical Mall location.

### **SHP Criterion 2 – Quality Assurance**

The University Hospitals and Clinics documented that the proposed MRI equipment is FDA approved and that only qualified personnel will be allowed to operate the equipment. The equipment will not be rented, leased, or otherwise used by other providers.

### **SHP Criterion 3 – Information Recording/Maintenance**

The applicant affirmed that it will maintain, at a minimum, the information required by this criterion and will make it available to the Mississippi Department of Health within 15 days of request.

### **SHP Criterion 4 - Registration**

The University Hospitals and Clinics is a registered entity authorized to do business in Mississippi.

### **SHP Criterion 5 – CON Approval**

The applicant is requesting CON approval for the equipment stated in this application.

## Criteria and Standards for the Offering of MRI Services

### **SHP Criterion 1 - Need**

The University Hospitals and Clinics is a current provider of MRI services and is in compliance with this criterion.

The University Hospitals and Clinics estimates that the two units will perform 2,805 procedures during the first year, 3,558 during the second year, and 4,562 during the third year of operation. This equates to 1,403 procedures per unit the first year, 1,779 procedures per unit the second year, and 2,281 procedures per unit the third year of operation.

As previously mentioned, the application contains seven physician affidavits, which indicates that over 2,656 MRI procedures will be referred by the end of the second year of operation for the additional unit to be located at the Jackson Medical Mall.

### **SHP Criterion 2 - Documentation of Diagnostic Imaging Modalities**

The University Hospitals and Clinics submits that it offers a full line of imaging including, but not limited to, full body computed tomography (CT), ultrasound, angiography, nuclear medicine, and conventional radiology.

### **SHP Criterion 3 – Accessibility**

The applicant submits that the University's policy is to treat any individual within its scope of services regardless of race, color, age, sex, ethnicity, or ability to pay.

### **SHP Criterion 4 – Staffing**

The University Hospitals and Clinics submits the following with respect to this criterion:

- There is a director who is a full-time board certified radiologist whose primary responsibility during the prior three years has been in the acquisition and interpretation of clinical images. The director has knowledge of MRI through training, experience, or post graduate education. The director has documented in his employment file a minimum of one week of full-time training with a functioning MRI unit.

- The University has at least one full-time MRI technologist who has had appropriate education, training, and experience. This MRI technologist will be on site at all times during operating hours. The MRI technologist will be experienced in CT or other cross-sectional imaging methods or will have equivalent training in MRI spectroscopy.

#### **SHP Criterion 5 – Research Staffing**

Should the MRI be used for experimental procedures with formal/approved protocols, a full-time medical physicist or MRI scientist with at least one year of experience in diagnostic imaging will be available in the facility.

#### **SHP Criterion 6 - Data Requirement**

The applicant submits that all information will be maintained and made available to the MDH upon request.

### **B. General Review (GR) Criteria**

Chapter 8 of the *Mississippi Certificate of Need Review Manual, 2000 Revision*, addresses general criteria by which all CON applications are reviewed. The applicable criteria are discussed below:

#### **GR Criterion 1 – Consistency with the State Health Plan**

The applicant's proposed project is consistent with the *FY 2006 Mississippi State Health Plan*.

#### **GR Criterion 2 – Long Range Plan**

The applicant submits that the objective of the project is to provide state-of-the-art facilities to support the teaching, research, and patient care mission of the University of Mississippi Medical Center.

#### **GR Criterion 3 – Availability of Alternatives**

The applicant states that there is not sufficient capacity within the University Hospitals' other MRI locations to relocate any outpatient tests performed on the MRI located at the University Medical Pavilion. The applicant believes that replacing the old, slow MRI unit and adding an additional MRI is the only acceptable option.

As for the third MRI unit to be located at the Medical Mall, UMC contends that this is the only acceptable alternative which will make the technology easily accessible to patients.

#### **GR Criterion 4 – Economic Viability**

The project appears to be economically viable. The applicant projects a net income of \$1,356,643 for the first year, \$1,705,626 for the second year, and \$2,708,998 for the third year of operation of the UMC Medical Pavilion project. The applicant also projects a net income of \$121,763 for the first year, \$241,924 for the second year, and \$765,055 for the third year of operation of the unit at the Jackson Medical Mall.

Proposed charges are within the range of charges for MRI services charged by other providers in the state. The applicant projects a charge of \$2,497 per scan during the first year, \$2,622 per scan during the second year, and \$2,753 per scan during the third year of operation. The average charge per MRI scan for other hospitals was \$1,428 for FY 2004, with a high charge of \$3,200.

The applicant proposed levels of utilization are reasonably consistent with those experienced by similar facilities in the service area and state.

The application contains a feasibility study indicating that the project is feasible.

#### **GR Criterion 5 – Need for the Project**

As stated earlier, the applicant is a current provider of MRI services. This project seeks the authority to replace an existing unit and purchase an open-bore unit to be located at the UMC Medical Pavilion, and to purchase a third unit to be located in the Cancer Center at the Jackson Medical Mall. The University Hospitals and Clinics estimates that the two units will perform 2,805 procedures during the first year, 3,558 during the second year, and 4,562 during the third year of operation. This equates to 1,403 procedures per unit the first year, 1,779 procedures per unit the second year, and 2,281 procedures per unit the third year of operation.

The application contains seven physician affidavits, which indicates that over 2,656 MRI procedures will be referred for the unit to be located at the Jackson Medical Mall by the end of the second year of operation.

### **GR Criterion 6 – Access to Facility or Services**

The applicant submits that all residents of the health planning service area, hospital service area and/or patient service area, including Medicaid recipients, charity/medically indigent patients, racial and ethnic minorities, women, handicapped persons, and the elderly have access to the services of the existing facility and will continue to have access.

### **GR Criterion 7 – Information Requirement**

The applicant affirmed that it will record and maintain the required information and make it available to the Mississippi Department of Health upon request.

### **GR Criterion 8 – Relationship to Existing Health Care System**

The applicant submits that as Mississippi's only true tertiary referral center and Level I Trauma Center, The University Hospitals and Clinics has patient transfer agreements with all hospitals in the health planning service areas as well as most, if not all, hospitals in the state.

This project is not expected to have an adverse impact on any other provider of MRI services.

### **GR Criterion 9 – Availability of Resources**

The applicant submits that it has a Radiological Technologist Training program and also an advanced imaging program in MRI. The applicant proposes to recruit within its system, from graduating students of one of these programs or from the local area.

### **GR Criterion 10 – Relationship to Ancillary or Support Services**

The applicant states that there is no impact on the use of ancillary or support services other than the staffing needed for the additional MRI.

### **GR Criterion 16 – Quality of Care**

The University Hospitals and Clinics is in compliance with the *Minimum Standards of Operation for Mississippi Hospitals*. The hospital is accredited by the Joint Commission on Accreditation of Healthcare Organizations.



**IV. Financial Feasibility**

**A. Capital Expenditure Summary**

Construction Cost – New	\$483,094	6.8%
Construction Cost - Renovation	452,000	6.4%
Capital Improvements	10,000	.1%
Total Fixed Equipment	4,581,240	64.3%
Total Non-Fixed Equipment	808,056	11.3%
Site Preparation Cost	142,900	2.0%
Fees (Architectural, Consultant, Etc.)	146,000	2.1%
Contingency Reserve	152,699	2.2%
Capitalized Interest	281,363	3.9%
Other Cost (Printing & Removal of Modular Building & MRI)	66,000	.9%
<b>Total Proposed Capital Expenditure</b>	<b>\$7,123,352</b>	<b>100.0%</b>

The above capital expenditure is proposed for the purchase of three MRI units, including the replacement of an existing MRI unit, and construction/renovation of space to house the units. The applicant proposes total new construction of 4,900 square feet.

**B. Method of Financing**

The applicant proposes that the project will be financed through the Institution of Higher Learning (IHL) Capital Lease Program and patient revenue reserves.

**C. Effect on Operating Cost**

The applicant projects the following results from operation for the first three years following completion of the project at the UMC Pavilion:

**Three Year Projected Operating Statement  
 UMC Medical Pavilion**

	<b>First Year</b>	<b>Second Year</b>	<b>Third Year</b>
<b>Revenue</b>			
Outpatient Revenue	\$7,003,805	\$9,328,169	\$12,558,421
<i>Deductions</i>	<i>4,631,717</i>	<i>6,168,853</i>	<i>8,305,066</i>
<b>Net Outpatient Revenue</b>	<b>\$2,372,087</b>	<b>\$3,159,316</b>	<b>\$4,253,355</b>
<b>Expenses</b>			
Salaries & Wages	\$185,068	\$194,321	\$204,037
Fringe Benefits	49,783	52,272	54,886
Contractual	208,572	318,982	398,818
Commodities	56,521	73,845	97,522
Interest	118,267	94,136	68,960
Depreciation	397,233	720,133	720,133
<b>Total Expenses</b>	<b>\$1,015,444</b>	<b>\$1,453,690</b>	<b>\$1,544,357</b>
<b>Net Income</b>	<b>\$1,356,643</b>	<b>\$1,705,626</b>	<b>\$2,708,998</b>
Total Procedures	2,805	3,558	4,562
Cost per Procedure*	\$362	\$409	\$339
Charge Per Procedure	\$2,497	\$2,622	\$2,753

**\*Staff calculations. Some figures vary due to rounding.**

In addition, the applicant projects the following operation results from the MRI unit to be located at the Caner Center Imaging Center at the Jackson Medical Mall.

**Three Year Projected Operating Statement  
 UMC Cancer Center Imaging MRI (Medical Mall)**

	<b>First Year</b>	<b>Second Year</b>	<b>Third Year</b>
<b>Revenue</b>			
Outpatient Revenue	\$1,880,166	\$3,290,290	\$5,527,687
<i>Deductions</i>	<i>1,373,373</i>	<i>2,403,403</i>	<i>4,037,718</i>
<b>Net Outpatient Revenue</b>	<b>\$ 506,793</b>	<b>\$ 886,887</b>	<b>\$1,489,969</b>
<b>Expenses</b>			
Salaries & Wages	\$ 92,534	\$ 97,161	\$ 102,019
Fringe Benefits	24,892	26,136	27,443
Contractual	69,159	157,823	214,732
Commodities	15,173	26,047	42,925
Interest	0	0	0
Depreciation	183,272	337,796	337,796
<b>Total Expenses</b>	<b>\$ 385,029</b>	<b>\$ 644,962</b>	<b>\$ 724,915</b>
<b>Net Income</b>	<b>\$ 121,763</b>	<b>\$ 241,924</b>	<b>\$ 765,055</b>
Total Procedures	753	1,255	2,008
Cost per Procedure*	\$ 511	\$ 514	\$ 361
Charge Per Procedure	\$ 2,497	\$ 2,622	\$ 2,753

\*Staff calculations. Some figures vary due to rounding.

**D. Cost to Third Party Payors**

The cost of the project to third party payors is as follows (based on total outpatient revenue):

<b>Patient Mix</b>	<b>Utilization Rate</b>	<b>First Year Cost</b>
Medicare	28.4%	\$1,989,081
Medicaid	10.7%	749,407
Other Payors*	60.9%	4,265,317
<b>Total</b>	<b>100.0%</b>	<b>\$7,003,805</b>

\*The applicant projects 16 percent bad debt patients and 20 percent for charity care.

**V. RECOMMENDATION OF OTHER AFFECTED AGENCIES**

The Division of Medicaid was provided an opportunity to review and comment on this application. No written comments have been received.

## VI. CONCLUSIONS AND RECOMMENDATION

This application is in substantial compliance with the criteria and standards for the acquisition or otherwise control of MRI equipment and provision of MRI services, as contained in the *FY 2006 Mississippi State Health Plan*; the *Mississippi Certificate of Need Review Manual, 2000 Revision*; and all adopted rules, procedures, and plans of the Mississippi Department of Health.

The Division of Health Planning and Resource Development recommends approval of the application submitted by The University Hospitals and Clinics of the University of Mississippi Medical Center for:

- 1) Replacement of an existing MRI unit at the UMC Medical Pavilion,
- 2) Acquisition of an additional MRI unit to be located at the UMC Medical Pavilion, and
- 3) Acquisition of an MRI unit to be located at the UMC Cancer Imaging Center (Medical Mall).